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**Datasheet for the decision
of 21 July 2020**

Case Number: T 0561/18 - 3.3.04

Application Number: 12155885.2

Publication Number: 2455473

IPC: C12N15/82, C12N9/02, A01H5/08

Language of the proceedings: EN

Title of invention:
Disease resistant plants

Patent Proprietor:
Enza Zaden Beheer B.V.

Opponent:
Rijk Zwaan Zaadteelt en Zaadhandel B.V. (opposition and appeal withdrawn)

Headword:
Spinach plant resistant to Peronospora farinosa/ENZA ZADEN BEHEER

Relevant legal provisions:
EPC Art. 100(b), 123(2)
RPBA 2020 Art. 15(7)

Keyword:

Main request - insufficiency of disclosure (yes);
auxiliary request I - added subject-matter (yes);
Form of decision - abridged form in respect of one or more
issues

Decisions cited:

Catchword:



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Case Number: T 0561/18 - 3.3.04

D E C I S I O N
of Technical Board of Appeal 3.3.04
of 21 July 2020

Appellant: Enza Zaden Beheer B.V.
(Patent Proprietor) Haling 1E
1602 DB Enkhuizen (NL)

Representative: Bird & Bird LLP
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted on
19 December 2017 concerning maintenance of the
European Patent No. 2455473 in amended form.

Composition of the Board:

Chair L. Bühler
Members: R. Morawetz
A. Chakravarty

Summary of Facts and Submissions

- I. The appeal by the patent proprietor (appellant) lies from the opposition division's interlocutory decision, according to which European patent No. 2 455 473 did not disclose the invention claimed in the main request (patent as granted) in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. The patent as amended in the form of auxiliary request I and the invention to which it relates, were found to meet the requirements of the EPC.
- II. The patent derives from European patent application No. 12 155 885.2, published as EP 2 455 473 ("application as filed" or "application") and is entitled "*Disease resistant plants*". The patent was opposed on the grounds for opposition set out in Article 100(a) EPC, in relation to novelty (Article 54 EPC) and inventive step (Article 56 EPC), and in Article 100(b) and 100(c) EPC.
- III. With their statement of grounds of appeal, the appellant maintained the patent as granted as their main request and filed sets of claims of auxiliary requests I and II, where auxiliary request II corresponds to auxiliary request I held allowable by the opposition division.

Claim 1 of the main request reads as follows:

"1. Spinach plant which is resistant to *Peronospora farinosa*, characterized in that the plant has a reduced level, reduced activity or complete absence of DMR6 protein as compared to the plant that is not resistant

to the said pathogen wherein said plant has a mutation in its *DMR6* gene resulting in a *DMR6* protein with reduced enzymatic activity as compared to the *DMR6* protein encoded by the wild-type *DMR6* gene wherein no such mutation is present; or said plant has a mutation in its *DMR6* gene resulting in a reduced *DMR6* expression as compared to the wild-type *DMR6* gene wherein no such mutation is present."

- IV. In reply to the statement of grounds of appeal of the opponent-appellant the appellant re-submitted sets of claims of auxiliary requests I and II and further submitted sets of claims of auxiliary requests III to VIII.

Claim 1 of auxiliary request I reads as follows (amendments made compared with claim 1 of the main request are highlighted):

"1. Spinach plant which is resistant to *Peronospora farinosa*, characterized in that the plant has a reduced level, ~~reduced~~ no activity or complete absence of *DMR6* protein as compared to the plant that is not resistant to the said pathogen wherein said plant has a mutation in its *DMR6* gene resulting in a *DMR6* protein with reduced enzymatic activity as compared to the *DMR6* protein encoded by the wild-type *DMR6* gene wherein no such mutation is present; or said plant has a mutation in its *DMR6* gene resulting in a reduced *DMR6* expression as compared to the wild-type *DMR6* gene wherein no such mutation is present."

- V. The opponent filed an appeal but then withdrew the opposition and the appeal with letter dated 16 January 2020 and ceased to be a party to the appeal

proceedings.

VI. The following documents are referred to in this decision:

- O5 Chapter 4 of Tieme Zeilmaker, PhD Thesis Utrecht, (2012)
- BB2 Multiple alignment of spinach DMR6 (*S. oleracea*) with known oxidoreductases, filed with the appellant's response to the opposition
- BB11 Wilmouth R.C. et al., Structure (202), vol. 10, pages 93 to 103
- BB12 Lukačín R. and Britsch L., Eur. J. Biochem. (1997), vol. 249, pages 748 to 757

VII. The board appointed oral proceedings, as requested by the appellant, and on 1 July 2020 issued a communication pursuant to Article 15(1) RPBA setting out its preliminary appreciation of the appeal. In this communication, the appellant was informed, *inter alia*, that the board was of the opinion that the opposition division when not admitting documents BB11 and BB12 into the proceedings had exercised their discretion in accordance with the right principles and without exceeding the proper limits of their discretion (see points 10 to 12). None of the lines of argument put forward by the appellant with respect to sufficiency of disclosure of the invention claimed in the main request was found persuasive by the board (see points 13 to 22). Claim 1 of auxiliary request I was considered to relate to subject-matter which extends beyond the content of the application as filed (see points 24 to

28) and to lack clarity (see point 29).

VIII. Oral proceedings before the board were held on 21 July 2020. During the oral proceedings the appellant stated that they agreed to an abridged decision (Article 15(7) RPBA) by reference to the board's communication dated 1 July 2020. At the end of the oral proceedings the chair announced the decision of the board.

IX. The appellant's arguments submitted in writing and during the oral proceedings and insofar not already summarised in the board's communication dated 1 July 2020 are summarised as follows.

Review of the opposition division's discretionary decision not to admit documents BB11 and BB12

Documents BB11 and BB12 were already mentioned in a quotation of document O5 in the appellant's response to the opposition, see letter dated 13 February 2017, page 9, point 46, and thus cited from the onset of the opposition proceedings. Either both the appellant and the opponent could have been aware of these documents in view of the quotation or, alternatively, both were not aware of these documents.

In both cases, there was no reason for not admitting the documents into the proceedings. In the first case, the documents would be only the confirmation of what was known anyhow by the parties. In the second case, the documents should be admitted, because they were *prima facie* relevant.

Documents BB11 and BB12 were *prima facie* relevant because they reinforced the argument that with the

information provided in the patent and the common general knowledge the skilled person could have identified the iron-binding residues of DRM6 and by mutating these residues would have obtained DMR6 variants with reduced or abolished enzymatic activity.

Document BB11 showed not only that the catalytic triad of oxidoreductases was known before the priority date but also that at the time alignments of enzymes were performed to identify residues essential for enzymatic activity, see Figure 6. Document BB11 disclosed that replacement of His220 by glutamine and Asp222 by asparagine remarkably reduced the catalytic activity to about 0.15% and 0.4%, respectively, see the full abstract of document BB12.

Main request (patent as granted) - claim 1

Sufficiency of disclosure (Article 100(b) EPC)

While claim 1 specified that the spinach plant had a mutation in its *DMR6* gene resulting in a DMR6 protein with reduced enzymatic activity the patent supported a broader claim construction, namely one wherein a reduced amount of DMR6 protein also resulted in reduced enzyme activity, see paragraphs [0015], [0050], [0063] of the patent. Example 1 provided guidance to carry out that aspect of the invention.

In the patent a causal link between DRM6 enzyme function and plant resistance phenotype had been established. The skilled person knew how to mutate a plant, how to test for the presence of the DRM6 protein and how to assess the resistance phenotype. Pathogen resistance indicated a reduced enzyme function.

The conserved catalytic domain was known to the skilled person, see document O5. With this knowledge the skilled person could make an alignment of the amino acid sequences of spinach DRM6 and known oxidoreductases and identify the catalytic domain of the spinach DRM6 protein, see document BB2. A targeted mutagenesis approach could be used to change the amino acids of the catalytic domain to produce a plant having reduced enzymatic activity.

Auxiliary request I

Amendments (Article 123(2) EPC) - claim 1

In addition to paragraphs [0067] and [0081] the claimed subject-matter was based on paragraphs [0020], [0017] and [0031] of the application as filed.

Paragraph [0081] referred to plant species of interest and paragraph [0020] disclosed a list of such plants which included spinach. Thus only one selection was necessary to arrive at the claimed subject-matter. Paragraphs [0017] and [0031] disclosed plants with a mutation in the *DRM6* gene resulting in plants without enzymatic activity.

- X. The appellant requested that the decision under appeal be set aside and the patent be maintained as granted (main request) or, alternatively, that the patent be maintained in amended form on the basis of auxiliary request I.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 99 EPC and is therefore admissible.
2. In accordance with Article 15(7) RPBA, the reasons for the present decision are given in abridged form for those issues in respect of which the board has issued a communication pursuant to Article 15(1) RPBA, namely Article 100(b) EPC of the main request and Article 123(2) EPC of auxiliary request I to the extent that they deal with the appellant's written submissions while the appellant's further arguments submitted during the oral proceedings before the board are dealt with below. The reasons with respect to the review of the opposition division's discretionary decision not to admit documents BB11 and BB12 are given in full below.

Review of the opposition division's discretionary decision not to admit documents BB11 and BB12

3. Documents BB11 and BB12 were filed by the appellant during the oral proceedings before the opposition division. In the exercise of their discretion pursuant to Article 114(2) EPC the opposition division decided not to admit these documents into the proceedings because they found that these documents were not submitted in due time and not prima facie relevant (see decision under appeal, points 3.1 to 3.3).
4. The appellant challenged the opposition division's decision and submitted that in not admitting the documents the opposition division exercised their discretion in an unreasonable way.

5. The board notes that it should overrule the way in which the opposition division exercised their discretion in reaching their decision only if it concludes that they did so in accordance with the wrong principles, without taking the right principles into account or in an arbitrary or unreasonable way (see Case Law of the Boards of Appeal, 9th edition 2019, V.A.3.5.1.b)).
6. In a first line of argument the appellant submits that documents BB11 and BB12 were cited from the onset of the opposition proceedings since they were cross-referenced in a passage of document O5 cited in the appellant's response to the opposition.
7. The passage relied on by the appellant in support of their argument that documents BB11 and BB12 were not filed late reads in its entirety as follows:

"Further, the catalytic triad amino acids of oxidoreductases belonging to the same family of DMR6 were already known from the prior art. This is confirmed in the postpublished document O5 which cites prior art documents and shows in this context a multiple alignment of DMR6 of Arabidopsis and oxidoreductases known from before the priority date. O5 discloses on p. 82 in the first paragraph:

"The two histidines (H) and one aspartic acid (D) residues were previously shown to be essential for the activity of the 2-oxoglutarate Fe(II) dependent oxygenases flavonone 3-hydroxylase (F3H) and anthocyanidin synthase (ANS) (Lukacin and Britsch, 1997; Wilmouth et al. 2002)." (emphasis added)

8. When assessed on an objective basis, the mere mention of "*Lukacin and Britsch, 1997*" and "*Wilmouth et al. 2002*" in the passage quoted from document 05 (see preceding point) cannot, absent any indication that the cross-references are relied on in addition to the quote and without specifying the relevant text-passages, be understood as reference to what constitutes relevant evidence, let alone as introducing such evidence into the proceedings.
9. These documents were thus not part of the factual framework from the onset of the opposition proceedings and the opponent or the opposition division could not be expected to be familiar with their content. In the board's judgement the opposition division thus correctly concluded that these documents when filed at the oral proceedings were not submitted in due time but late (Article 114(2) EPC).
10. According to established jurisprudence of the boards of appeal, a decisive criterion for admitting late-filed documents is their prima facie relevance for the outcome of the case (see Case Law of the Boards of Appeal, 9th edition 2019, IV.C.4.5.3).
11. The opposition division considered that documents BB11 and BB12 were not prima facie relevant because the assertion these documents were meant to support - that the catalytic triad of oxidoreductases was known before the priority date - was not in dispute and hence no further documents were needed in support thereof (see decision under appeal, point 3.3).
12. In the board's judgement, the opposition division took into account the right principles by assessing the prima facie relevance of documents BB11 and BB12 in

view of the assertion these documents were meant to substantiate.

13. The appellant's line of argument with respect to the prima facie relevance of documents BB11 and BB12 (see section IX.) does not address the reasons given in the decision under appeal. The board has not heard any argument that the appealed decision misrepresents the appellant's case before the opposition division. Any alleged relevance of documents BB11 and BB12 that goes beyond the assertion they were meant to substantiate in the opposition proceedings, see point 11. above, is not relevant in the context of the review of the opposition division's discretionary decision by the board.
14. The board concludes that the opposition division has given sufficient reasons for their exercise of discretion, applied the correct principles and did not exceed the proper limits of their discretion. Accordingly, the board upholds the opposition division's decision. Documents BB11 and BB12 are thus not part of the appeal proceedings.

Main request (claims as granted)

Sufficiency of disclosure (Article 100(b) EPC)

15. With respect to the appellant's lines of argument represented in writing, the board refers to its communication dated 1 July 2020 for the reasons as to why they are not found persuasive (see points 13 to 22).
16. During the oral proceedings, the appellant further submitted that the patent's description allowed for a broader interpretation of claim 1, namely one in which

not only a mutation in the *DRM6* gene but also a reduced amount of DRM6 protein resulted in reduced enzyme activity and that Example 1 of the patent provided guidance to carry out that aspect of the invention.

17. Claim 1 stipulates that "*said plant has a mutation in its DRM6 gene resulting in a DRM6 protein with reduced activity*" (see section III. above). The board considers that the expression "*DRM6 protein with reduced activity*" has a clear technical meaning in the art which is different from and does not encompass a "*reduced amount*" of the protein. This has not been contested by the appellant. The meaning of the feature in question is thus clear to the skilled person from the wording of the claim.
18. In these circumstances, and in line with established jurisprudence of the boards of appeal, the description cannot be relied on to interpret the term in a different way (see for example decision T 2221/10, Reasons, point 33). The argument that based on the description, a reduced amount of DRM6 protein is encompassed within the meaning of the term "*reduced activity*" in claim 1 therefore fails. That the patent provides guidance on how to reduce the amount of the DRM6 protein therefore does not allow the skilled person to carry out the invention as claimed.
19. In a further line of argument, the appellant submitted that the skilled person could look at the resistance phenotype of a mutated spinach plant to identify a plant with a mutation in its DRM6 gene resulting in a DRM6 protein with reduced activity.
20. In the board's view this argument fails because the patent provides no guidance which would allow the

skilled person to distinguish between a DRM6 protein with reduced activity and a DRM6 protein with no activity when looking at the pathogen resistance phenotype.

21. Finally, relying on document BB2, the appellant submitted that the skilled person could identify the catalytic domain of the spinach DRM6 protein and use a targeted mutagenesis approach to change the amino acids of the catalytic domain to produce a plant containing a DRM6 protein with reduced enzymatic activity.
22. In the board's judgement, this argument fails because the patent provides no guidance to this effect. Document BB2 depicts an alignment of spinach DMR6 with known oxidoreductases. The information provided by document BB2 is not contained in the patent nor did it belong to the common general knowledge at the effective date of the patent. On the contrary, the patent proposes that a random mutagenesis be carried out, see paragraph [0020], but does not propose a targeted mutagenesis approach involving the catalytic triad of DRM6 protein and is silent about which screening methods should be used by the skilled person to identify plants which have a mutation in their DRM6 gene resulting in reduced enzymatic activity, see paragraph [0021].
23. For the reasons set out above and the reasons set out in the communication dated 1 July 2020 the board concludes that the ground of opposition under Article 100(b) EPC prejudices the maintenance of the patent as granted.

Auxiliary request I

Amendments (Article 123(2) EPC) - claim 1

24. With respect to the appellant's lines of argument represented in writing reference is made to the board's communication of 1 July 2020 for the reasons why these arguments are not found persuasive (see points 24 to 28).
25. According to the established jurisprudence of the boards of appeal a combined selection of features does not, for the person skilled in the art, emerge clearly and unambiguously from the content of the application as filed, in the absence of any pointer to that particular combination. The fact that features in question have been mentioned in the description as "preferred" may act as a pointer (see Case Law of the Boards of Appeal, 9th edition 2019, section II.E.1.6.1).
26. In the board's communication of 1 July 2020 the board held that several selections are necessary to arrive at the claimed feature "*no activity*" in paragraph [0081] of the application as filed and that no pointer has been provided for arriving at that combination or for the further combination of that feature with the remaining features of claim 1, e.g. the spinach plant.
27. During the oral proceedings the appellant submitted in addition that the claimed subject-matter was based on paragraphs [0020], [0017] and [0031] of the application as filed.
28. Paragraph [0020] discloses that "*the invention is suitable for a large number of plant diseases caused by*

oomycetes such as, but not limited to, Bremia lactucae on lettuce, Peronospora farinosa on spinach, Pseudoperonospora cubensis on members of the Cucurbitaceae family, e.g. cucumber and melon, Peronospora destructor on onion, (...), Phytophthora infestans on tomato and potato, and Phytophthora sojae on soybean".

29. It is evident from the preceding point that paragraph [0020] relates to various plant diseases and not to "plants of interest" as submitted by the appellant. In addition, these plant diseases are presented in the form of a lengthy list without any recognisable preference for *Peronospora farinosa* on spinach.
30. Paragraph [0017] discloses that "*in a particular embodiment this is achieved by mutations in the DMR6 coding sequence that result in a non-functional DMR6 protein, i.e. without or with reduced enzymatic activity." (emphasis added)*
31. Paragraph [0031] reads in full "*to achieve a reduced DRM6 protein level, the expression of the DMR6 gene can be down-regulated or the enzymatic activity of the DMR6 protein can be reduced by amino acid substitutions resulting from nucleotide changes in the DMR6 coding sequence." (emphasis added)*
32. It is evident from the preceding two points that both paragraph [0017] and paragraph [0031] disclose mutations or amino acid substitutions resulting from nucleotide changes in the DRM6 coding sequence and not plants with a mutation in the DRM6 gene as required by claim 1. Moreover paragraph [0031] discloses reduced enzymatic activity but not absence or "no activity" as

required by claim 1. Finally, both paragraphs are silent about spinach. Therefore, paragraphs [0017] and [0031] provide no basis for any of the features of claim 1.

33. The board concludes that the subject-matter of claim 1 represents a combined selection of features from paragraphs [0081] and [0020] of the application. None of these features is originally disclosed as being preferred. Their combination thus results in subject-matter which extends beyond the content of the application as filed.
34. For the above reasons and the reasons set out in the board's communication dated 1 July 2020 the board concludes that claim 1 of auxiliary request I does not meet the requirements of Article 123(2) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



I. Aperribay

L. Bühler

Decision electronically authenticated